ROLE OF LAPAROSCOPY IN MANAGEMENT OF COLORECTAL CARCINOMA

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Summary

Laparoscopy has improved the surgical treatment of various diseases due to its limited surgical trauma and has developed as an interesting therapeutic alternative for open colorectal surgery.The applicability of laparoscopy to colorectal carcinoma continues to expand.

In laparoscopic management of colorectal carcinoma, it is important to standardize the preoperative and the postoperative care plans, so that optimal results can be obtained. Also appropriate patient choice and differences in surgical techniques or surgeon's skills may account for the great variability in outcome.

Laparoscopic-assisted colectomy for Colon cancer has been shown to be safe, with equivalent long-term survival rates to conventional open colectomy and better short-term patient outcomes. However, LAC tends to require more operating theatre time and disposable equipment. LAC for Colon cancer appears to be cost-effective relative to open colectomy. Expected future reductions in operating times, conversion rates and postoperative stays will further improve cost-effectiveness.

In rectal cancer, technical hurdle as well as doubt on oncological clearance had once limited sphincter preservation to carcinomas located at the recto sigmoid junction or in the upper rectum. Progress in technology and skills, however, has finally led to the controversial extension of minimally invasive techniques to distal rectal cancer with sphincter preservation. Generally laparoscopic management of colorectal carcinoma has a lot of advantages including decreased postoperative pain, early discharge from the hospital, less duration of postoperative ileus, less postoperative adhesions, less morbidity, less wound infection, less intraoperative blood loss, and improved cosmoses.

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List of Abbreviations

APC	Adenomatous polyposis coli
APR	Abdominoperineal resection
CD	Chron's disease
CDS	Complicated Diverticulosis of the Sigmoid
HLA	Human leucocytes antigen
UC	Ulcerative Colitis
NHMRC	National Health and Medical Research Council
AJCC	The American Joint Committee on Cancer
HALS	Hand-assisted Laparoscopic Surgery
LAC	Laparoscopic-assisted Colectomy
OC	Open Colectomy
TME	Total Mesorectal Excision
COLOR	Colon Carcinoma Laparoscopic or Open Resection
ACL	Anococcygeal ligament
ACRS	American Society of Colon and Rectal Surgeons
APR	Abdominoperineal resection
AS	Anal sphincter
BL	Broad ligament
CEA	Carcinoembryonic antigen
DCBE	Double contrast barium enema
DRE	Digital rectal exam
EIA	External iliac artery
EIV	External iliac vein
EAES	European Association of Endoscopic Surgeons
FAP	Familial adenomatous polyposis
FOBT	Blood Fecal occult test
FT	Fallopian tube
GFN	Genitofemoral nerve
GV	Gonadal vessels

HALS	Hand-assisted laparoscopic surgery
HF	hepatic flexure
HN	Hypogastric nerve
HNPCC	Hereditary nonpolyposis colorectal cancer
ICA	Ileocolic artery
ICV	Ileocolic vein
IIA	Internal iliac artery
IIR	Internal inguinal ring
IMA	Inferior mesenteric artery
IMV	Inferior mesenteric vein
L bMCA	Left branch of the middle colic artery
LCA	Left colic artery
LlQ	The Left lower Quadrant
LUL	Latral umblical ligament
LUQ	The Left Upper Quadrant
MCA	Middle colic artery
MCV	Middle colic vein
MUL	Medial umblical ligament
Pb	Pancreatic body
PET	Positron emission tomography
PF	Pelvic floor
RA	Renal artery
RALC	Right-angled linear cutter
RlQ	The Right lower Quadrant
RUQ	The Right Upper Quadrant
SC	Sigmoid colon
SF	Splenic flexure
SLC	Straight linear cutter stapler
SMA	Superior mesenteric artery
SMV	Superior mesenteric vein
TC	Transverse colon
UF	Uterine fundus

Introduction

Colorectal cancer is the third most common malignant disease and the second most frequent cause of cancer related death in the western Countries, with 145,290 new cases and 56,290 deaths occurred in 2005.Worldwide, colorectal cancer is the fourth most commonly diagnosed Malignant disease, with an estimated 1,023,000 new cases and 529,000Deaths each year **(Jemal et al., 2005)** .

It is the third most common cancer in both men and women in the United States **(Lui &Crawford, 2005)** .Colorectal cancer is the second most prevalent cancer in the developed world and the third most prevalent in developing nations.**(Pisani P et al., 2002).**Colon cancer is becoming common in Egypt. Its also has unique characteristics that differ from those reported in the western countries.**(Abeer A. Bahnassy et al., 2002).**

Improved laparoscopic skills and introduction of new instruments have led to broad applications of laparoscopy in benign and malignant diseases. Recently, institutional and multicenter randomized trials have shown that laparoscopic surgery for colorectal cancer is safe and an acceptable alternative for open surgery **(Leung et al, 2004).**

Minimally invasive techniques are being refined for colorectal cancer surgery with well documented advantages of less postoperative pain, reduced ileus, shorter hospital stay, better cosmosis and earlier return to work. In the hands of experienced laparoscopic and colorectal surgeons, the initial concerns over port site recurrences are probably unfounded and the long-term survival at least comparable with open surgery. **(Lumley J et al., 2002).**

Laparoscopy has improved the surgical treatment of various diseases due to its limited surgical trauma and has developed as an interesting therapeutic alternative for open colorectal surgery. The applicability of laparoscopy to colorectal diseases continues to expand.Laparoscopic approach should be mainly considered for patients with benign conditions, For colorectal cancer, results from randomized trials so far have been favorable.**(Chung C.C ,et. al 2003).**

Laparoscopic colorectal surgery for advanced colorectal carcinoma is controversial because of the technical difficulties in lymph node dissection.**(Yamato Watanabe M.H et al., 2001)**

On the other hand, in stage IV colorectal cancer,patients who underwent palliative laparoscopic surgery,the laparoscopic surgery might facilitate effective palliation in selected patients,with the avoidance of a major laparotomy.**(Hartley J.E et al.,2002).**

There are three basic roles of laparoscopic surgery for patients with colorectal cancer.First,although infrequently needed prior to therapy, diagnostic or staging laparoscopy may be valuable in certain colorectal cancer patients. Second, the laparoscopic approach may offer several attractive features for the palliative management of patients with incurable colorectal cancer. Finally, although this issue is the most controversial, there are theoretic but unproved advantages of using laparoscopic techniques for curative colorectal cancer therapy.The concerted efforts of surgical oncologists and their colleagues must prove this theory in well constructed trials. **(Milson J.W et al.,2004).**

Studies confirmed reduction in conversion rates with experience and highlighted that the learning curve is quite prolonged, with improvement noticeable even after several years.However,such results should be interpreted with some caution, as with increasing experience, surgeons tend to undertake more challenging cases,which may skew the results.In various studies,although the conversion rates have decreased with experience,there has been no significant change in the duration of surgery.The main reason for conversion in these studies was adhesions,which is similar to other series. Better case selection may also contribute to reduction in conversion rates **(Shah et al, 2005).**